Criteria of distributive justice : an economic inquiry

VALORIZATION

What, why and to whom?

The current dissertation provides insights on criteria of distributive justice in a variety of economic environments. Distributive justice concerns the fair distribution of resources, including but not limited to income, goods and services, wealth, education, health care and opportunities. The four main chapters of this dissertation focus on the distribution of a group of commodities, the distribution of income, the distribution of opportunities for income in a society, and the distribution of water from an international river among riparian countries, respectively.

The relevance of this dissertation is therefore best explained by focusing on the social and economic relevance of the results presented in individual chapters.

The second chapter, "An axiomatic approach to the measurement of envy", provides a class of functions to measure envy in a society. As noted in the introduction and concluding remarks of the chapter, the envy measures proposed in the chapter can be used as multidimensional inequality measures in the (realistic) case of individuals who have possibly different preferences over the bundle of goods in question.

Naturally, there exists a wide variety of inequality measures that are based on different philosophical ideas, and that are designed to be used in different contexts. The literature is far too wide to provide a review here, yet suffice it to say, for our purposes here, that we can roughly divide inequality measures into two groups: unidimensional inequality measures and multidimensional inequality measures. The former are measures that focus on distributions of

only one commodity such as income. However, there are many situations in which there are several dimensions to inequality and these dimensions cannot be reduced to a single index in a meaningful manner. For example, public authorities may be interested in the distributions of housing, health, education, food, etc. in the population and not so much with the distribution of income per se. Another case of interest is the case where the government is concerned both with income and with non-monetary variables. In such situations, unidimensional inequality measures prove inadequate to compare inequality within and between populations. The acknowledgement of this fact has lead to a wide literature on multidimensional inequality measurement beginning with the seminal articles by Kolm (1977) and Atkinson and Bourguignon (1982).[11] And, as noted above, it is that literature that this chapter belongs to.

At this point, it is important to note the relevance of inequality measurement. Inequality is important for both normative and practical reasons. Social justice is central in considerations of inequality in a society. "*That more just societies should register lower numbers on the inequality scale evidently accords with an intuitive appreciation of the term inequality*" (Cowell, 2011, p. 11). Justice arguments are often made in connection with all dimensions of social life such as income, wealth, political power, taxation, labor markets, education, health care and military service. For instance, in considering a particular policy proposal – say for reducing the amount given in student grants – the inequality implication of the policy (that is whether the policy leads to more or less inequality) is often taken to be an argument for or against the policy. A primary motivation for inequality measurement is therefore to guide policy. However, we need to be able to measure inequality in order to be able to assess inequality implications of policies. Thus, as noted by Kaplow (2005), measuring inequality seems appropriate as an input to policymaking. As such, the results of this chapter are of interest to policymakers as well as empirical researchers.

The third chapter, "Laissez-faire versus Pareto", contributes to discussions of libertarianism by showing the difficulty of combining libertarianism with

[11] See Savaglio (2002) for a survey.

Pareto efficiency. As such, the academic community is the target audience of this chapter.

The fourth chapter, "Measurement of equality of opportunity: a normative approach", proposes social welfare functions and inequality measures to compare income distributions in terms of equality of opportunity. Equality of opportunity measures distinguish between inequalities arising from the exercise of individual responsibility and inequalities due to predetermined circumstances.

The theory of equality of opportunity differs from the classical theories of distributive justice in that perfect equality where each individual is given the same outcome (e.g., the same income for everyone) is not promoted as the ideal. Instead, a central role for personal responsibility is incorporated into the definition of distributive justice. It is argued that the outcome (e.g., income) of an individual is determined by his circumstances, which are characteristics that cannot be attributed to individual responsibility (e.g., gender), and responsibility characteristics which the individual can be held accountable for (e.g., effort). Inequalities due to circumstances (e.g., wage difference due to gender) are considered unacceptable, while inequalities due to responsibility characteristics (e.g., wage difference due to a difference in the number of hours worked) may be acceptable.

Such a distinction between equality of opportunity as an ideal and equality of outcomes as an ideal is of interest to economists for at least four reasons. First, a society in which people are not discriminated against on the basis of race, ethnicity, religion, sex and sexual orientation is widely upheld as desirable in itself Arneson (2015). Second, we know from social and political debate, surveys Schokkaert and Devooght (2003) and economic experiments Cappelen et al. (2007) that most people have a conception of fairness similar to that adopted by the theory of equality of opportunity. That is, they consider some inequality of outcomes fair. Third, there is evidence showing that there may be a link between perceptions of fairness and individual attitudes towards redistribution which in turn affect actual levels of redistribution, and hence investment and output generated (Alesina and Angeletos, 2005; Bénabou and Tirole, 2006). Finally, as argued by The World Bank (2005), equality of opportunity can be

instrumental for economic growth. Thus, equality of opportunity has normative and practical significance. And as in the case of inequality measurement, the primary motivation for the measurement of equality of opportunity is to guide policy. As also in the case of inequality measurement, we must first be able to measure equality of opportunity in order to make empirical use of the concept. As such, the measures provided in this chapter are of interest to policymakers as well as empirical researchers.

The fifth chapter, "Fair sharing of an international river", contributes to the debate on sharing water from international rivers. Proposed here is a methodology to compare international river water allocations in terms of fairness and efficiency.

Water resources are called international if they are shared by several countries. Examples include rivers and lakes that border two or more countries and rivers that flow from one country into another. In all these cases, one country's use of the shared water resource affects the quantity or quality available to another country (Barrett, 1994).

The problem of river water sharing is of considerable practical importance given the fact that148 rivers in the world flow through two countries, 30 through three, 9 through four, and 13 through five or more (Barrett, 1994).

Sharing water from international rivers has often been a source of conflict between riparian countries mostly because property rights over rivers are not well defined. Examples of disputes listed by Kilgour and Dinar (1995, p. 1) include the proposal for out-of-basin diversion of the Mekong River (Thailand and Laos); the operation of the Farraka Barrage diversion of the Ganges (India and Bangladesh); the proposed desalination plant near Morales Dam on the Colorado River (Mexico and U.S.A.); and the dispute over the 1959 Nile water agreement (Egypt, Sudan, and now Ethiopia). Several international principles of international law were proposed to solve this problem. We focus on three principles that attracted most attention from policymakers and researchers: absolute territorial sovereignty, unlimited territorial integrity and territorial integration of all basin states. Even though these principles are intuitive, they are difficult to formulate in applications. Moreover, there is an ongoing debate on which one

to use in practical applications. It is these two questions that this chapter tackles. First, we propose a way to formalize the principles. Second, we argue that territorial integration of all basin states must be chosen over absolute territorial sovereignty and unlimited territorial integrity. Taking territorial integration of all basin states as the primary criterion of distributive justice, we propose a ranking that could be used to assess distributions of water among riparian countries. Furthermore, the ranking proposed in the chapter can easily be used to propose an implementable scheme for the allocation of water from a given river. The target audience of this chapter, in addition to the scientific community, is therefore, again, policymakers.

Future directions

All chapters of this dissertation are prepared for publication in international academic journals. In this section, we briefly discuss theoretical and applied research that the chapters of this thesis can lead to.

For each chapter, the context within which the model is defined can be changed into more realistic (and hence, complicated) contexts. For instance, in case of chapter two, a possible extension would be to propose envy measures in a production model where individuals possess unequal productive skills in addition to unequal preferences. Or one can modify our measures so as to compare envy in societies with different population sizes, which is a particularly necessary practice if one wishes to compare inequality levels between two countries. With regard to applications, one needs information on individual preferences in order to use our envy measures in applications. These could be derived from surveys. Once one has information on preferences, our measures are very easy to apply since they require the use of simple functions applied to pairwise comparisons of individual bundles.

In case of chapter four, a natural first extension of this paper would be to study the empirical applications of our measures. The classes of welfare functions and inequality measures presented in the chapter are large in the sense that many possibilities are available for use in empirical research. For instance,

one could apply our measures to see to what extent the tax system in a country, or a region, equalizes opportunities for income acquisition. Some examples of questions to ask are "Does socio-economic status of one's parents affect one's chances in life?", "How about gender, race, sexual orientation?" or, on a more international level, "How should international aid be distributed based on country characteristics?" Our measures are readily applicable to such questions. A particular advantage our measures possess is that they allow for different ideological positions as to how exercise of responsibility is rewarded.

Chapter four considers comparisons of income distributions with a fixed set of circumstance and responsibility characteristics. A second natural extension would be to develop measures for comparisons of income distributions with different profiles of individual characteristics.

A third possible extension would be to focus on multidimensional inequality of opportunity. As discussed above, there are good reasons to do so. For instance, in the question of distributing international aid, international organisations might be willing to provide in-kind transfers such as medication, medical equipments and housing along with monetary transfers. One needs multidimensional measures of equality of opportunity to determine the fair distribution of aid in this case.

In case of chapter five, a first natural extension would be to develop rankings that allow for different property rights over the river in question. Technically, that could be achieved by relaxing the anonymity assumption in the chapter. As for applications, our rankings are easily applicable provided that one has information over countries' preferences over water consumption.